

CLAIMS

What is claimed is:

1. An implantable component including a feedthrough assembly, the feedthrough assembly comprising:
 - an insulator electrically isolating a terminal pin from a ferrule, the terminal pin extending through the ferrule;
 - an insulator-to-ferrule interface;
 - an insulator-to-terminal pin interface; and
 - a backfill deposited over the insulator and including a coating forming a fluid barrier over the insulator, the insulator-to-ferrule interface and the insulator-to-terminal pin interface.
2. The component of claim 1, wherein the coating has a maximum thickness approximately less than or equal to 0.01 inch.
3. The component of claim 2, wherein the maximum thickness is between approximately 0.0001 inch and approximately 0.005 inch.
4. The component of claim 1, wherein the coating comprises a material selected from the group consisting of silicones, polyimides, and fluorosilicones.
5. The component of claim 1, wherein the backfill further includes a layer of epoxy and the coating is located between the epoxy layer and the insulator.
6. The component of claim 1, wherein the backfill further includes a layer of epoxy and the epoxy layer is located between the coating and the insulator.

7. The component of claim 1, wherein the backfill further includes a layer of silicone and the coating is located between the silicone layer and the insulator.
8. The component of claim 1, wherein the backfill further includes a layer of silicone and the silicone layer is located between the coating and the insulator.
9. The component of claim 1, wherein the backfill further includes at least one more coating formed over the coating.
10. The component of claim 4, wherein the backfill further includes at least one more coating formed over the coating.
11. The component of claim 9, wherein the backfill further includes a layer of epoxy and the epoxy layer is located between the coating and the at least one more coating.
12. The component of claim 9, wherein the backfill further includes a layer of silicone and the silicone layer is located between the coating and the at least one more coating.
13. The component of claim 1, wherein the coating contacts a top surface of the ferrule.
14. The component of claim 1, wherein the coating contacts the insulator.
15. The component of claim 1, wherein the insulator is formed of a glass material.
16. The component of claim 1, wherein the insulator is formed of a ceramic material.

17. The component of claim 16, further comprising a braze material at the insulator-to-ferrule interface and at the insulator-to-terminal pin interface and wherein the coating contacts the braze material at one or both of the interfaces.

18. A method for forming a feedthrough assembly for an implantable component comprising applying a coating to form a fluid barrier over an insulator, an insulator-to-terminal pin interface and an insulator-to-ferrule interface.

19. The method of claim 18, wherein the coating has a maximum thickness approximately less than or equal to 0.01 inch.

20. The method of claim 19, wherein the maximum thickness is between approximately 0.0001 inch and approximately 0.005 inch.

21. The method of claim 18, wherein the coating comprises a material selected from the group consisting of silicones, polyimides, and fluorosilicones.

22. The method of claim 21, further comprising combining the material with a solvent to form the coating.

23. The method of claim 18, further comprising applying a layer of epoxy over the insulator, within the ferrule and around the terminal pin.

24. The method of claim 23, wherein the coating is applied between the insulator and the layer of epoxy.

25. The method of claim 23, wherein the layer of epoxy is applied between the insulator and the coating.

26. The method of claim 18, further comprising applying a layer of silicone over the insulator, within the ferrule and around the terminal pin.

27. The method of claim 26, wherein the coating is applied between the insulator and the layer of silicone.

28. The method of claim 26, wherein the layer of silicone is applied between the insulator and the coating.

29. The method of claim 18, further comprising applying at least one more coating over the coating.

30. The method of claim 29, further comprising applying a layer of epoxy over the insulator, within the ferrule and around the terminal pin.

31. The method of claim 30, wherein the coating and the at least one more coating are applied between the insulator and the layer of epoxy.

32. The method of claim 30, wherein the layer of epoxy is applied between the insulator and the coating.

33. The method of claim 30, wherein the layer of epoxy is applied between the coating and the at least one more coating.

34. The method of claim 29, further comprising applying a layer of silicone over the insulator, within the ferrule and around the terminal pin.

35. The method of claim 34, wherein the coating and the at least one more coating are applied between the insulator and the layer of silicone.

36. The method of claim 34, wherein the layer of silicone is applied between the insulator and the coating.

37. The method of claim 34, wherein the layer of silicone is applied between the coating and the at least one more coating.

38. The method of claim 18, wherein the coating contacts a top surface of the ferrule.

39. The method of claim 18, wherein the coating contacts the insulator.

40. The method of claim 18, wherein the coating contacts a braze material present at the insulator-to-terminal pin interface and / or at the insulator-to-ferrule interface.